Remarks/Arguments

Amendments to the Claims

Claims 1 and 5 have been amended to recite that the vector detection element comprises a selectable marker, a detectable marker comprising a gene encoding a protein that produces a detectable product, or both. Support for these amendments is found on page 14, lines 16-22 and page 15, lines 16-20.

Additionally, claim 1 has been amended such that the enumerated species of the second vector element Markush group are recited in the singular instead of the plural. This amendment is made for readability and to preserve proper subject-verb agreement.

No new matter is introduced as a result of these amendments.

Rejections under 35 U.S.C. §132(a)

The Examiner asserts that the amendments to the specification on pages 34-35 constitute new matter which is not supported by the disclosure. Several changes were made in the Response filed November 21, 2005, on pages 34-35 as well as other pages. The Examiner has not indicated which specific changes are believed to introduce new matter and thus Applicant is unable to formulate a response that directly responds to this rejection. However, in the interest of expediting prosecution, Applicant takes this opportunity to address each of the amendments to the specification made on November 21, 2005.

Sequence identifiers were introduced in the paragraph describing Figure 11 on page 7, lines 18-21. This amendment was introduced in response to a requirement in the Office Action mailed May 19, 2005 and the attached Raw Sequence Listing Error Report. Applicant submits that the insertion of sequence identifiers does not constitute new matter.

Similarly, incorrect sequence identifiers were deleted and correct sequence identifiers were introduced in the paragraphs on page 34, lines 1-6, page 34, lines 7-11, page 34, lines 12-16, and page 36, line 19-page 37, line 9. These amendments were introduced for the purpose of clarification and in order to direct the reader to the correct SEQ ID NO in the sequence listing. Additionally, certain typographical errors in the sequences were corrected in the paragraphs on

page 34, lines 12-16 and page 36, line 19-page 37, line 9. Applicant submits that no new matter was introduced as a result of these amendments.

In the paragraph spanning page 35, line 17 - page 37, line 5, the word "ibanucleotides" was replaced with the word "ribonucleotides". Applicant submits that the word "ibanucleotides" does not exist and that in reading the specification, one of ordinary skill in the art would recognize from context that this was a simple misspelling of the correct word "ribonucleotides".

Finally, in the paragraph spanning page 35, line 17 - page 36, line 5, the word "3'Omethyl" was replaced with the word "2'-O-methyl". Applicant submits that this was an obvious typographical error since primers containing internal 3'Omethyl residues cannot exist. As those of ordinary skill in the art are aware, nucleotide residues are joined together via 5' -3' phosphodiester linkages. A residue with a 3'Omethyl moiety would not be able to be joined to the 5' phosphate group of another residue, and would thus be the 3' terminal residue of the oligonucleotide.

However, as is clear from the specification, "the ROC technique described in this Example [Example 7] utilizes primers containing internal ribonucleotide residues… flanked by DNA residues" (page 35, lines 17-20, emphasis added). Thus, one of ordinary skill in the art would immediately recognize that the description of internal 3'Omethyl residues in Example 7 is a typographical mistake. Furthermore, from the description that primers containing such modified residues "can often be synthesized more easily (e.g., due to higher coupling efficiencies) than those containing inbanucleotides [sic: see above for correction to 'ribonucleotides'], and will generally be more stable…", one of ordinary skill in the art would understand that the description is referring to primers containing internal 2'-O-methyl residues.

Applicant thus respectfully requests that this rejection be withdrawn.

Rejections under 35 U.S.C. §102

Claims 1, 2, 4, 5, 12, and 14-21 are rejected under 35 U.S.C. §102(e) as being anticipated by Harney et al., US Patent No. 6,495,318 ("Harney"). The Examiner asserts that recitation of a "vector detection element" as a claimed species of second vector elements would be reasonably interpreted to include elements such as restriction sites. Applicant disagrees that one of ordinary skill in the art, in reading the previously pending claims in light of the specification, would

interpret the phrase "vector detection element" to include restriction sites. However, solely in order to expedite prosecution of this application and place it in condition for allowance, claims 1 and 5 have been amended to recite that the vector detection element that is reconstituted by recombining vector fragments comprises a selectable marker, a detectable marker comprising a gene encoding a protein that produces a detectable product, or both.

Harney discloses that vectors may be assembled by linking vector fragments that comprise complete vector elements (see e.g., Figure 1 of Harney). Harney neither teaches nor suggests the presently claimed methods of preparing a vector comprising a vector element, including a vector detection element, by admixing under linkage conditions at least one vector fragment from each of two collections of nucleic acid molecules, which vector fragments cannot alone provide a vector element function, wherein each of the collections comprises at least two alternative vector fragments, so that a hybrid molecule in which each of the vector fragments is linked together to reconstitute the vector element function is produced.

As such, this rejection is rendered moot and Applicant respectfully requests withdrawal thereof. Applicant reserves the right to pursue any subject matter canceled as a result of the present claim amendments in future prosecution, either in this application or in one or more continuing applications.

Rejections under 35 U.S.C. §103

Claims 1-5 and 12-21 have been rejected under 35 U.S.C. §103 as being obvious over Harney in view of Jarrell, US Patent No. 5,498,531 ("Jarrell '531") or Jarrell, US Patent No. 5,780,272 ("Jarrell '272"). Applicant traverses this rejection for the following reasons:

As described above, claims 1 and 5 have been amended to recite that the vector detection element that is reconstituted by recombining vector fragments comprises a selectable marker, a detectable marker comprising a gene encoding a protein that produces a detectable product, or both. These amendments are made solely in order to expedite prosecution of this application and place it in condition for allowance. Applicant reserves the right to pursue any subject matter canceled as a result of the present claim amendments in future prosecution, either in this application or in one or more continuing applications.

A necessary requirement to establish a *prima facie* case of obviousness is that all claim limitations must be taught or suggested by the prior art (see *Manual of Patent Examining Procedure*, section 2143.03). Harney discloses that vectors may be assembled by linking vector fragments that comprise complete vector elements (see e.g., Figure 1 of Harney). Harney neither teaches nor suggests the presently claimed methods of preparing a vector comprising a vector element, such as a vector detection element as presently claimed, by admixing under linkage conditions at least one vector fragment from each of two collections of nucleic acid molecules, which vector fragments cannot alone provide a vector element function, wherein each of the collections comprises at least two alternative vector fragments, so that a hybrid molecule in which each of the vector fragments is linked together to reconstitute the vector element function is produced.

Applicant agrees with the Examiner that Jarrell '531 and Jarrell '272 disclose nucleic acids that have intronic elements to facilitate trans-splicing between such nucleic acids. Applicant further agrees that compositions and methods taught in Jarrell '531 and Jarrell '272 are generally applicable to nucleic acid manipulation. Thus, Jarrell '531 and Jarrell '272 describe generally useful nucleic acid manipulation techniques, including techniques that are based on RNA elements with intronic activity. Such elements are not described in Harney.

However, Applicant submits that it is improper to base on obviousness rejection on a reference describing a generally useful nucleic acid manipulation technique, which reference is used to cure the deficiencies of a reference that fails to teach or suggest all claim limitations. For example, ligation is also a useful method of linking nucleic acid molecules. Yet, surely the Examiner would agree that a reference describing nucleic acid ligation in general cannot be combined with Harney to form a sufficient basis to reject the currently pending claims on the grounds of obviousness.

The present application discloses, and the currently pending claims recite, methods that fulfill a genuine need in the art. In contrast to off-the-shelf vectors on which practitioners in the field of molecular biology have traditionally had to rely, the presently claimed methods recite novel and useful methods of generating vectors that meet the molecular biology practitioner's specific, individual needs. The fact that general molecular biology techniques can be used in conjunction with the presently claimed methods does not negate their patentability.

In light of the current amendments to the claims and for the reasons described above, Applicant respectfully requests withdrawal of this rejection.

In light of these Remarks and Amendments, Applicant submits that the present application is in condition for allowance. A notice to that effect is respectfully requested. If the Examiner believes a telephone call would be useful in expediting prosecution of this application, the undersigned invites the Examiner to call him at the number below.

Please charge any fees associated with this response, or apply any credits, to our Deposit Account Number 03-1721.

Respectfully submitted,

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